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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/748,526

12/29/2003

Andrew Berlin

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06/08/2006

EXAMINER

LARKIN, DANIEL SEAN

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SUITE 1100
SAN DIEGO, CA 92121-2133

ART UNIT

PAPER NUMBER

2856

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Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.		Applicant(s)	
	10/748,526		BERLIN ET AL.	
	Examiner		Art Unit	
	Daniel S. Larkin		2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 15 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 12-15, 20-24 and 30-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 33-37 is/are allowed.
- 6) ☒ Claim(s) 1-4, 12-15, 20-24 and 30-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>15 March 2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-4, 12-15, 20-24 and 30-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re claims 1 and 15, claim lines 1 and 2: The preamble make reference to a method of "identifying characteristics or properties of molecules"; however, the body of the claim fails to provide a connection between scanning the nanocodes and identifying characteristics or properties of the molecules.

Re claim 20, claim line 1: The preamble make reference to a method of "identifying characteristics or properties of molecules"; however, the body of the claim fails to provide a connection between scanning the nanocodes and identifying characteristics or properties of the molecules. Scanning a structure does not necessarily lead to identification. Applicant has apparently misconstrued the examiner's arguments that "scanning can be used to generate characteristics or properties of the molecules" rather than identification as a invitation to add such language to the preamble. In either instance, as originally claimed or as amended, the body of the claims does not provide a step correlating scanning a molecule with a process of identifying the molecule. If applicant wishes to provide an identification type preamble,

than applicant is required to add this limitation to the claim in order to receive consideration of the preamble.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1-3 and 12-15 are rejected under 35 U.S.C. 102(a) as being anticipated by US 2003/0033863 (Ashby et al.).

With respect to the limitations of claim 1, the reference to Ashby et al. discloses an atomic force microscope for use in screening potential interactions between biological molecules comprised of an array of scanning probe tips, as shown in Figure 8; and an analyzer coupled to the scanning array. As to the limitation of providing an array that is "capable of scanning nanocodes", the examiner argues that given that the device of Ashby et al. is an atomic force microscope used to measure on the atomic level, the array of Ashby et al. would inherently have the capability of measuring nanocodes, as it does with measuring small molecules and proteins, among the many other uses available to an atomic force microscope.

With respect to the limitation of claim 2, the reference to Ashby et al. would again have the inherently capability of measuring friction characteristics.

With respect to the limitations of claim 3, the reference to Ashby et al. discloses an atomic force microscope comprised of an array of two or more scanning probe tips, as shown in Figure 8.

With respect to the limitation of claim 12, the reference to Ashby et al. would again have the inherently capability of measuring DNA molecules.

With respect to the limitation of claim 13, the reference to Ashby et al. appears to discloses means for holding a sample (20).

With respect to the limitation of claim 14, since the reference to Ashby et al. would have the inherent capability of scanning nanocodes, the array would also have the inherent capability of measuring molecular assay labels.

With respect to the limitations of claim 15, the reference to Ashby et al. discloses an atomic force microscope for use in screening potential interactions between biological molecules comprising: means to support a substrate (20); an array of scanning probe tips, as shown in Figure 8; and an analyzer coupled to the scanning array. As to the limitation of providing an array that is "capable of scanning nanocodes", the examiner argues that given the device of Ashby et al. is an atomic force microscope that is used to measure on the atomic level, the array of Ashby et al. would inherently have the capability of measuring nanocodes, as it does with measuring small molecules and proteins, among the many other uses available to an atomic force microscope.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2003/0033863 (Ashby et al.) in view of US 5,047,633 (Finlan et al.).

With respect to the limitation of claim 4, the reference to Ashby et al. fails to expressly recite that the scanning array is a three by three array. The reference to Finlan et al. discloses an apparatus for imaging macromolecules and interactions involving macromolecules, whereby an array of probes (13) is utilized to perform the imaging. One example, as shown in Figure 4, shows a four by four array of scanning probes. It is the examiner's position that one of ordinary skill in the art would have the requisite ability to create a scanning array as large or as small as the operator wishes in order to take advantage of the number of sample needed to be scanned, as well as to more quickly scan a plurality of samples.

Allowable Subject Matter

7. Claims 20-24 and 30-32 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

8. Claims 33-37 are allowable.

Response to Arguments

9. Applicant's arguments filed 15 March 2006 have been fully considered but they are not persuasive.

With respect to applicants' argument that the reference to Ashby et al. fails to disclose a scanning array simultaneously scanning a surface, page 8, lines 5-11, the examiner respectfully disagrees with applicants' arguments for the following reasons: First, the reference to Ashby et al. discloses an array of probes that may have independent means for position control. Moreover, the reference discloses that a single piezo element may control the z-axis position of the entire array, paragraph [0044]. This would appear to suggest simultaneous scanning of the array. Second, the array of Ashby et al. does disclose scanning a surface area. In this instance a surface area is comprised of individual surfaces; however, the array would also inherently work on a single substrate. As to applicants' argument that Ashby et al. fail to use more than one AFM head to analyze an individual sample area, the examiner argues that the claim language does not recite "an individual sample area". The claim recites "a surface area" which can be interpreted as one or more surface areas. The article "a" can mean one or more; therefore, the reference to Ashby et al. would read upon a surface area. Additionally, contrary to applicant's position, it appears that each probe, as shown in applicants' Figure 7, has its own individual scanning area. It doesn't appear from the drawing figure that one area of a substrate undergoes scanning from multiple probes, as applicants' suggest. Regardless of how one frames the argument, applicants' invention has a natural division of the substrate as well. Each probe is responsible for

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an area defined by the range of the piezos used to actuate the cantilevers. For instance, the third probe in the third array does not scan the same area as the first probe of the first area, so it would appear that applicants' scanning array works in a similar fashion to that disclosed in Ashby et al.

With respect to applicants' argument that the reference to Ashby et al. fails to disclose an analyzer, the examiner respectfully disagrees. The reference to Ashby et al. discloses an AFM for high throughput analysis. In order to perform an analysis, one needs to provide means for analysis. This is what the processor of an AFM does. The reference further discloses that test substances are made to interact with proteins, small molecules, biomolecules, and other molecules on a surface, and these interactions are investigated, paragraph [0039]. These interactions that are investigated are the characteristics and properties of both the test substances and the unknown material on the surface.

With respect to applicants' argument that the reference to Finlan et al. fails to teach a scanning array or a 3X3 array, the examiner respectfully disagrees. The examiner concedes that Finlan et al. discloses that surface can be divided up into a plurality of cells and monitoring each cell with a single; however, that appear to be only one option to the invention proposed by Finlan et al. Figures 2, 3, and 9 appear to show an array of provide progressing across an undivided substrate. Moreover, applicants' argue scanning an array of probes over an individual sample area. As was argued previously, the claims language does not recite "an individual sample area".

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Larkin whose telephone number is 571-272-2198. The examiner can normally be reached on 8:00 AM - 5:00 PM Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel Larkin
AU 2856
30 May 2006



DANIEL S. LARKIN
PRIMARY EXAMINER